

IN THE CLAIMS:

Please amend claims 1-16 as follows. Please add new claim 17 and 18 as follows.

1. (Currently Amended) A method ~~of reducing a peak to mean ratio of a multi-carrier signal~~ comprising ~~the steps of:~~

generating a residual signal from a multicarrier signal, the residual signal representing a difference between the multicarrier signal and a hard-clipped multicarrier signal;

applying a least squares function to the residual signal for at least one carrier of the multi-carrier signal, thereby generating a minimized residual signal for the at least one carrier; and

combining the minimized residual signals and the multicarrier signal.

2. (Currently Amended) A method according to claim 1 further comprising ~~the step of,~~ prior to the ~~step of~~ combining the minimized residual signals, filtering at least one minimized residual signal.

3. (Currently Amended) A method according to claim 1 further comprising ~~the step of~~ delaying the multicarrier signal, wherein the delayed multicarrier signal is combined with the minimized residual signal.

4. (Currently Amended) A method according to claim 1, wherein the ~~step of~~ generating the residual signal includes ~~a step of~~ clipping the multicarrier signal to a predetermined level to thereby generate the hard-clipped multicarrier signal.

5. (Currently Amended) A method according to claim 2, wherein the ~~step of~~ filtering comprises complex filtering.

6. (Currently Amended) A method according to claim 5, wherein the ~~step of~~ filtering comprises ~~a step of~~ multiplying the residual signal by a projection matrix of a spanned signal space of the at least one carrier.

7. (Currently Amended) A method according to claim 5, wherein the ~~step of~~ filtering includes ~~the steps of~~ applying to the residual signal, for at least one carrier, a matrix function, a sampling function, a filtering function and an interpolation function.

8. (Currently Amended) ~~Apparatus for reducing a peak to mean ratio of a multi-carrier signal, the~~ An apparatus comprising:

a generating unit configured to generate ~~means for generating~~ a residual signal from a multicarrier signal, the residual signal representing a difference between the multicarrier signal and a hard-clipped multicarrier signal;

an applying unit configured to apply ~~means for applying~~ a least squares function to the residual signal for at least one carrier of the multi-carrier signal, thereby generating a minimized residual signal for the at least one carrier; and

a combining unit configured to combine ~~means for combining~~ the minimized residual signals and the multicarrier signal.

9. (Currently Amended) Apparatus according to claim 8, further comprising ~~means for a~~ filtering unit configured to filter each minimized residual signal prior to implementation of the combining ~~step~~.

10. (Currently Amended) Apparatus according to claim 9, further comprising a delaying unit configured to delay ~~means for delaying~~ the multicarrier signal, wherein the delayed multicarrier signal is combined with the minimized residual signals.

11. (Currently Amended) Apparatus according to claim 9, wherein the generating ~~unit means for generating the residual signal~~ includes ~~means for a~~ clipping unit configured to clip the multicarrier signal to a predetermined level to thereby generate the hard-clipped multicarrier signal.

12. (Currently Amended) Apparatus according to claim 10, wherein the filtering ~~unit means~~ comprises a complex filter.

13. (Currently Amended) Apparatus according to claim 12, wherein the filtering ~~unit means~~ comprises a multiplying unit configured to multiply ~~means for multiplying~~ the residual signal by a projection matrix of a spanned signal space of the at least one carrier.

14. (Currently Amended) Apparatus according to claim 13, wherein the ~~step of~~ filtering unit includes an applying unit configured to apply ~~means for applying~~ to the residual signal, for at least one carrier, a matrix function, a sampling function, a filtering function and an interpolation function.

15. (Currently Amended) A mobile communication system comprising: ~~including~~
a transmitter apparatus configured to reduce a peak-to-mean ratio of a multi-carrier
signal; ~~the mobile communication system comprising~~
a generating unit configured to generate ~~means for generating~~ a residual signal from
a multicarrier signal, the residual signal representing a difference between the
multicarrier signal and a hard-clipped multicarrier signal;
an applying unit configured to apply ~~means for applying~~ a least squares function to
the residual signal for at least one carrier of the multi-carrier signal, thereby generating a
minimized residual signal for the at least one carrier; and
a combining unit configured to combine ~~means for combining~~ the minimized
residual signals and the multicarrier signal.

16. (Currently Amended) The mobile communication system according to claim
15, wherein said generating unit ~~means~~, said applying unit ~~means~~ and said combining
unit ~~means~~ are implemented in a GSM EDGE mobile communication system.

17. (New) An apparatus comprising:
generating means for generating a residual signal from a multicarrier signal, the
residual signal representing a difference between the multicarrier signal and a hard-
clipped multicarrier signal;
applying means for applying a least squares function to the residual signal for at
least one carrier of the multi-carrier signal, thereby generating a minimized residual
signal for the at least one carrier; and
combining means for combining the minimized residual signals and the
multicarrier signal.

18. (New) A mobile communication system comprising:

generating means for generating a residual signal from a multicarrier signal, the residual signal representing a difference between the multicarrier signal and a hard-clipped multicarrier signal;

applying means for applying a least squares function to the residual signal for at least one carrier of the multi-carrier signal, thereby generating a minimized residual signal for the at least one carrier; and

combining means for combining the minimized residual signals and the multicarrier signal.